

High Power Uplink Amplifier for Deep Space Communications, Phase II

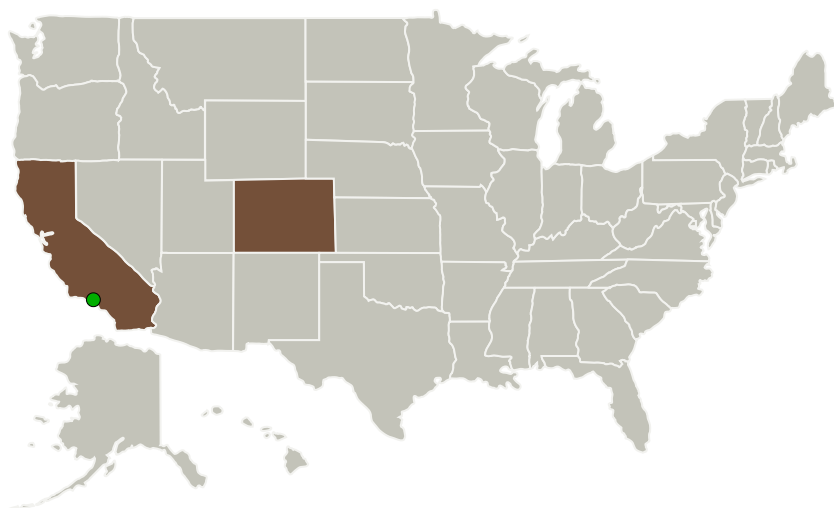
Completed Technology Project (2011 - 2015)




Project Introduction

Critical to the success of delivering on the promise of deep space optical communications is the creation of a stable and reliable high power multichannel optical uplink/beacon. Optical Engines proposes to deliver in phase 2 2 compact and low cost fiber amplifiers suited to the uplink application. This will be accomplished through the use of Optical Engines proprietary Multi-Fiber Coupled 2.5kW laser diode stacks, its Etched Taper All Fiber Combiner Technology and a custom designed Photonic Crystal Fiber. One of these amplifiers will be of the Coiled PCF type and one of the Rod type and will be integrated into existing NASA deep space communications up link infrastructure.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Optical Engines, Inc.	Lead Organization	Industry	Colorado Springs, Colorado
 Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California



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Primary U.S. Work Locations

California

Colorado

Project Transitions



June 2011: Project Start



April 2015: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/137400>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Optical Engines, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Donald L Sipes

Co-Investigator:

Donald Sipes

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Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
 - └ TX05.1 Optical Communications
 - └ TX05.1.1 Detector Development

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System